UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 23, 1996

Mr. Dave Song
Department of the Navy
Engineering Field Activity West
900 Commodore Drive, Code 1832.3
San Bruno, California 94066-5006

RE: Draft Engineering Evaluation/Cost Analysis Site IR-3: Waste Oil Reclamation Ponds, Hunters Point Annex

Dear Mr. Song:

EPA has completed its review of the above referenced document, prepared by Levine•Fricke, Inc and PRC Environmental Management, Inc and submitted on April 19, 1996. In general, the EE/CA does not support some of the more significant conclusions and recommendations made within the text, notably with regard to the removal action objectives, the nature and extent of the contamination and the discussion of the recommended alternatives. The comments are divided into general and specific concerns and are presented as follows:

General Comments:

1. The terms "removal" and "remedial" are used interchangeably throughout the document. "Remedial" is a CERCLA term that denotes final action and is not covered by an EE/CA.

2. Although the waste oil ponds contain large amounts of petroleum products, hazardous substances have been shown to be present, either as constituents of the petroleum wastes or as separate wastes disposed of into the ponds. Please check to make sure that both petroleum products **and** hazardous substances are consistently taken into account throughout the document when discussing contaminants present at IR-3, both in soil and in the dissolved phase in the groundwater.

3. The stated removal action objectives include the mitigation of harmful impacts to surface water through removal or

control of the source. Section 6.2.1.2, and also page 2 of the ES, state that this removal action will not address groundwater. However, large amounts of contamination apparently are below the water table, which is disturbing given the location directly on the shoreline and the fact that the impacts to the Bay come from the groundwater, not from the soil. It is unclear how the proposed alternatives meet the removal action objective.

4. Include an estimate of the total quantity of waste oil currently in-place, including a breakdown of the amounts above and below 11 feet.

5. The nature and extent section of the EE/CA is inadequate. There are numerous borings and wells throughout the area. The text says that samples were analyzed for VOC, SVOC, PCBs and metals. This data should be indicated on the site maps and provided in the summary tables. All unpublished data for this site must be summarized in this EE/CA. Published data should also be summarized. This is necessary so that agency and public reviewers can evaluate the extent of contamination and the proposed technologies. Presently, the maps only show limited TOG information around IR-3. Data from areas near IR-3 should be shown to delineate the extent of contamination.

6. The "effectiveness" discussions do not include all of the items specified in Section 6.0, nor do the corresponding "cost" discussions in Section 6.2 through 6.6 include cost estimates. A discussion of effectiveness is incomplete without an evaluation of compliance with ARARs, permanence and the potential for the reduction of toxicity, mobility, and chemical volume.

7. The discussion of alternative 4 needs to cover long term management, i.e. institutional control to control access to the area where the soil will be replaced.

8. At an additional estimated cost of $537,000 more than alternative 4, alternative 6 proposes installation of sheet piling to limit mobility of contaminants. Please discuss how this extra cost is justified.

9. The comparative analysis of the various alternatives was presented into three categories; effectiveness, implementability and cost. Within those three categories there are various evaluation factors such as short-term effectiveness, compliance with ARARs, technical feasibility, etc. Discuss how the various factors within these categories were weighted in evaluating the removal action.

10. The comparison discussion in Section 7 should be more detailed, and include the schedule for implementation.

11. Most of the remedial alternatives evaluated had numerous potential factors that could significantly increase the cost. A more detailed discussion on the probability of encountering theses factors and on the resulting increased cost would greatly benefit the evaluation of the proposed alternatives, and for alternatives with similar estimated costs, would provide an additional important evaluation factor.

12. Comparing the cost of alternative 5 to the other options is not appropriate because alternative 5 is a much more extensive action. To be fair, the cost of this alternative should be compared to the other alternatives plus the future cost of remediating below the water table. EPA believes that alternative 5 may be the most cost effective solution overall.

Specific Comments

1. **Section 2.2, pg 7, last paragraph**: Check and/or recalculate stated capacities for the two oil reclamation ponds.

2. **Section 2.3.2, pg 8, paragraph 1**: It would be helpful to provide additional information about the wetland areas including their size and how they may affect the area needed for several of the remedial alternatives. Also, please indicate the location of the wetlands on a map.

3. **Figure 2-1**: Please include in the legend a description of all symbols used on this map.

4. **Section 2.3.3, pg 9, paragraph 1**: This document discusses the possible presence of a riprap, a barrier wall, or shoreline dike between IR-3 and the Bay. Discuss whether this feature will be further investigated either prior to evaluating the remedial alternatives or during design.

5. **Section 2.3.4, pg 9**: Include a groundwater elevation map, and include data indicating the dates and times that groundwater elevations were measured, and the dates that the monitoring wells were installed. The statement that groundwater flow direction is generally inland is contradicted by the contaminant plume maps and also by common sense. The sewer system is unlikely to be an important sink in this location.

   If vertical gradients are consistently upward, as stated in the text, then how did oily contamination (with a specific gravity of .9) get 15 feet below the water table?

6. **Section 3.1.1, pg 12, paragraph 1**: If the data which supports this EE/CA is unpublished, it must be provided in

this EE/CA. At a minimum, tables which summarize all detections in soil and groundwater should be included. Figures with posted data would be helpful. This data is necessary in order to evaluate the extent of contamination and whether the proposed remedial action is appropriate and adequate.

7. **Section 3.1.1, pg 12, last paragraph**: Given the estimated volume of oil disposed of per year (0.6 to 2 million gallons), the total capacity of the ponds (230,000 gallons), and the information that oil was removed only three times per year, it is likely that there were times when the ponds overflowed, or that oil was also disposed of on the adjacent land. This may be the source of the shallow contamination.

8. **Section 3.2, pg 13, paragraph 1**: Based upon the poor results of product skimming in existing wells, it is not clear that installation of new wells and product skimming would be worth the cost and effort. Please provide justification.

9. **Section 3.3, pg 14**: Because of the high concentrations of petroleum products, it is likely that detection limits for many of the chemicals of concern (primarily PAHs) are significantly above regulatory or risk-based levels but reported as nondetected with elevated detection limits. Analysis for PAHs should be performed using Method 8270 with selected ion monitoring (SIM) and extensive gel permeation chromatograph and silica gel cleanup of sample extracts.

10. **Section 4.2, paragraph 1**: The background information and discussion in this paragraph was not relevant in previous EE/CAs (i.e. Storm Drain EE/CA) and is not relevant to the understanding and support of alternatives presented in this EE/CA. It is, again, inappropriate for inclusion in this document. Please delete the paragraph.

11. **Section 4.2.1, pg 18, paragraph 2**: Although CERCLA exempts the removal action from obtaining permits, the substantive requirements must still be met. This paragraph indicates that the substantive requirements of the permits can be waived. Please correct.

12. **Section 4.2.2.1**: The discussion of ARARs is much too general. There are sections of the CCR which refer to waste characterization using federal and state criteria. It is incorrect to state that there are no chemical-specific ARARs.

13. **Section 5.1, pg 24**: Earlier in this report it is stated that this EE/CA only addresses soil and product. This section discusses institutional controls for groundwater which, as stated in the Executive Summary is not part of

this EE/CA. Please revise this section to discuss how institutional controls would be applied to soil and product.

14. **Section 5.2.1, pg 25, bullet 2**: The intent of this bullet is unclear. Please define the nature of the excavation.

15. **Section 5.2.1. and 5.2.2, pg 25-26**: It is not clear why sheet piling is retained and slurry walls are not. Subsurface obstructions will be a greater problem for sheet pile than for a slurry wall. It appears that the decision to retain slurry walls was made because of the potential for collapsing wall. Please support this argument.

16. **Section 5.2.3, pg 27, last paragraph**: When cost is used as a basis for dismissing a technology, the document should include an estimate of the associated cost so that the reader can reach the same conclusion as the Navy.

17. **Section 5.3.2.1, pg 28-29**: Wells are generally preferred for areas where uniform subsurface conditions exist since wells are point removal systems and are greatly influenced by the type of materials the well is screened across. Trenches are generally better for heterogenous soil since a trench intercepts all soil types and, when filled with gravel, will collect everything that seeps into it. For these reasons, an interceptor trench would be the preferred method to remove LNAPL in a heterogeneous material.

    This section also indicates that LNAPL is naturally immobile in a heterogeneous fill. In many cases, a heterogenous fill will provide voids and preferential pathways for the LNAPL to migrate depending on the type of fill, debris content and how it was placed. LNAPL immobility need not necessarily be true.

18. **Section 5.4.1, pg 29-30**: Provide cost information for soil washing since this was one of the factors that was used to eliminate this technology from further consideration.

19. **Section 5.4.2, pg 30-31**: There are several disadvantages listed for thermal desorption but the information on which these disadvantages are based is not provided. For example, it is stated that thermal desorption requires large amounts of energy. Define "large amounts of energy". Also define whether the energy per pound is greater than that required to construct a landfill and transport the soil to the landfill for disposal. When all things are considered, it is possible that thermal desorption uses less energy. Material handling for thermal desorption is most likely not that much greater than the on-site portion of off-site disposal and backfilling with clean fill. Additional information is necessary to support statements in this section.

20. **Section 5.4.3, pg 31**: The technology description is inadequate. Include a discussion of the stabilizing agent being considered. Discuss available performance data for this technology to support the requirement to provide an immobilized mass of oil saturated soil. Evaluate how the heterogeneity of the soil will affect the stabilization process.

21. **Section 5.6.2, pg 35**: Thermal treatment does not address ambient metals. This may be a problem for soil reuse.

22. **Section 5.7.2, pg 36**: Earlier in the report, thermal desorption was discussed. It is assumed that this was on-site desorption. This section (section 5.7.2) should also include a discussion of thermal desorption in an off-site facility and recycling the cleaned soil. Other off-site treatment/disposal options should be discussed and evaluated. For example, incorporation of the oil contaminated soil into asphalt should be included. This treatment technology is commonly used for petroleum laden soil.

23. **Section 6.1, pg 39, sentence 2**: Section 5 does not include a detailed evaluation of 1) excavation to groundwater, 2) excavation below groundwater, and 3) product skimming. The discussion which mentions these technologies should be expanded.

24. **Section 6.1, pg 39**: Other technologies that should be included are thermal desorption at an off-site facility and asphalt incorporation.

25. **Section 6.2.1.1, pg 41, bullets 1 and 4**: These bullets discuss sampling the soil to guide excavation, yet no action level criteria are listed.

26. **Section 6.2.2.1, pg 42, paragraph 1**: This paragraph discusses site sampling for establishing cleanup levels. It also says excavation will be based on visible evidence. It is not clear what objectives the sampling will meet. Clarify why grid sampling will be performed. It would appear that grid sampling may not be necessary if the extent of the excavation will be determined based on visible evidence as the excavation is occurring. Please include a description of the analyses to be performed on the samples.

27. **Section 6.2.1.2, pg 44, sentence 5**: This section states that the environment is protected since the majority of the product is removed. However, there is still significant product in the underlying soil that will continue to add contaminants to the environment. Removing a portion of the contamination will not necessarily protect the environment, but may increase the rate of natural attenuation and

mitigate the harmful impact to the environment from the contamination. This section should include a discussion of ARARs, permanence, and reduction in toxicity, mobility and volume as described in Section 6.0

28. **Section 6.2.1.3, pg 44**: This section should include a discussion of the problems (if any) associated with finding an area to stockpile the soil.

29. **Section 6.2.1.4, pg 45**: Please provide a summary of the costs for this option in the body of the report.

30. **Section 6.2.2.2, pg 47**: Visual observations of the soil as it is removed from the excavation may provide an indication of the soil contamination remaining below the water surface. Although this may not be completely comprehensive, there should be adequate visual signs that goals have been attained. This section should include a discussion of ARARs, permanence and reduction in toxicity, mobility and volume as discussed in Section 6.0.

31. **Section 6.2.2.3, pg 48**: This section should include a discussion of the problems (if any) associated with finding an area to stockpile the soil.

32. **Section 6.2.2.4, pg 49**: Please provide a summary of the costs for this option in the body of the report.

33. **Section 6.2.3.1, pg 49, paragraph 2**: Use of wells should be reconsidered given the heterogeneity of the fill. Trenches are likely to be more effective.

34. **Section 6.2.3.1, pg 50, paragraph 2**: This section states that 1,000 gallons of floating product will be assumed to be removed. For budgeting purposes, this number should be higher. It was estimated earlier in the report that 40,000 gallons of floating product exists. It this is true, removal of 1,000 gallons will provide no benefit and installation of any product removal system should be reconsidered. If product removal is a key objective, then a thorough effort should be put forth to design and install the removal system and removal of significantly more than 1,000 gallons should be assumed.

35. **Section 6.2.3.2, pg 50, paragraph 2**: The assumed low mobility of the free phase product should be compared to the soil contaminant concentrations (assuming the ponds are the point source) to confirm this assumption. Please include an evaluation and discussion that either confirms or invalidates the low mobility.

36. **Section 6.2.3.2**: This section should include a discussion of ARARs, permanence and reduction in toxicity, mobility and

volume as discussed in Section 6.0.

37. **Section 6.2.3.4**: Please provide a summary of the costs for this option in the body of the report.

38. **Section 6.3.1.3, pg 53**: Driving sheet pile around obstructions can be very time consuming and costly since one does not know where the subsurface obstruction ends. If significant subsurface obstructions are anticipated, slurry walls should be considered instead, or the area should be pre-excavated and backfilled prior to driving the sheet pile. In addition, there should be some discussion of corrosion since the steel sheets will be in contact with saltwater which may cause a shortened life span.

39. **Section 7.0**: These alternatives should include a discussion of the period of time needed for implementation. These schedule considerations may have an effect on the decision of the preferred alternative.

40. **Section 7.2, pg 71**: This section recommends alternative 2 or 4. However, alternative 3 is only marginally more expensive (10%) and permanently eliminates the toxicity and volume whereas disposal and stabilization do not. Based on the long-term effectiveness of Alternative 3, more consideration should be given to this alternative.

41. **Table 3-1. pg 4**: Define the asterisk in the TTLC column for total chromium in the footnotes. The table should also indicate the detection limits for nondetected analytes. Because of the high concentrations of petroleum products, it is likely that many detection limits are significantly above regulatory or risk-based levels.

42. **Table 4-1**: The wetlands citation should be to 40 CFR Part 6, Appendix A and Executive Order 11990. The remainder of the citation should be deleted.

43. **Table 4-1**: Coastal Zone Management Act - cite as Section 307(c) of 16 U.S.C. §§ 1451 et seq. Discuss consistency with state plan.

44. **Table 4-2**: If a treatment unit is used on site, then the table needs to discuss closure requirements for whatever type of treatment unit is used.

45. **Table 4-2**: The citation regarding RCRA generator requirements should reference hazardous waste disposal facilities as well as solid waste disposal facilities.

Appendix A

46. **Fourth bullet**: Explain the purpose of pre-excavation sampling. Eliminating pre-excavation sampling in favor of post-excavation sampling can reduce costs. Describe verification methods to be used to ensure that the contaminated soil has been removed.

47. **Fifth bullet**: It is not clear why sidewall samples were not considered in the estimate.

48. **Table A-7**: Costs for PCB analyses should be included.

49. **Table A-9**: It is nor clear what the analytical costs for product sampling ($150) cover. List the proposed analyses.

If you have any questions, please call me at (415) 744-2367.

Sincerely,

Anna-Marie Cook

Anna-Marie Cook
Remedial Project Manager

cc: Gavin McCabe, EPA
Cyrus Shabahari, DTSC
Richard Hiett, RWQCB
Mike McClelland, EFAWEST
Richard Powell, EFAWEST
Karla Brasaemle, Weston